GUIDANCE FOR CATEGORIZING NATURAL vs ANTHROPOGENIC FIRE EMISSIONS

APPROVED BY CONSENSUS:

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OF THE WESTERN REGIONAL AIR PARTNERSHIP
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EXECUTIVE SUMMARY

In 1999, the U.S. Environmental Protection Agency (EPA) promulgated rules in an effort to improve air quality in select national parks and wilderness areas (Federal Class I areas). The Regional Haze Rule (RHR) calls for state and tribes to work with federal agencies to improve visibility in 156 national parks and wilderness areas such as the Grand Canyon, Yellowstone, and Glacier. The RHR requires states, in coordination with federal land managers and other interested parties, to develop and implement visibility protection plans to reduce anthropogenic (man-made) air pollution that causes visibility impairment. Tribes are not subject to the same requirements of the RHR as states, but tribes wishing to assume the regional haze requirements outlined in the RHR may, according to the Tribal Authority Rule (TAR), seek approval under 40 CFR 49 to be "treated in the same manner as states."

The Western Regional Air Partnership (WRAP) is a collaborative effort of states, tribes, federal land mangers and other interested parties, brought together by WRAP, to develop technical and policy tools needed by western states and tribes to develop and implement visibility protection plans.

This Guidance on Categorizing Natural vs Anthropogenic Fire Emissions (Guidance) was developed to assist WRAP region burners and regulators in categorizing fire emissions as either "natural" or "anthropogenic" for the purpose of fulfilling RHR requirements under 40 CFR Part 51 Subpart P – Protection of Visibility. This Guidance was not developed for use involving exceedances and/or violations of National Ambient Air Quality Standards (NAAQS).

This Guidance does not alter or change the categorization policy set forth in the 2001 WRAP Policy for Categorizing Fire Emissions document (Policy). Rather, this Guidance provides reference to research, field procedures, maps, plans, etc. (categorization methods) to be used by burners and regulators when categorizing fire emissions as either "natural" or "anthropogenic." This Guidance also acknowledges the recommendations made by the Initiatives Oversight Committee Transmittal Letter to the WRAP as found in Appendix C of the Policy.

Interested parties have the capability, at any time, to review and comment on fire categorizations, procedures, and methods reported as part of a state or tribe visibility protection plan. Therefore, reference to interested parties as users of this Guidance is limited. Interested party access to tribal categorizations, processes, and methods is a matter between that party and the tribe.

Identifying categorization methods through consensus prior to categorization provides burners and regulators with information for categorizing fire emissions that is uniform, unbiased, and defensible and avoids potential disputes over emission categorization. Categorizing fire emissions will support states and tribes in tracking fire activity efforts in their respective jurisdictions using a fire tracking system. This information is essential

for creating an accurate fire emissions inventory. The fire emissions inventory is used in regional modeling to demonstrate reasonable progress toward the 2064 “natural” conditions goal.

The Policy, in part, addresses emissions from agricultural fire and Native American cultural fire. The Policy establishes that emissions from agricultural fire will be categorized as “anthropogenic” except in escaped prescribed fire situations where emissions from the escaped portion will be categorized as either “natural” or “anthropogenic” according to state or tribal interpretation of the Policy. Additionally, the Policy establishes that emissions from Native American cultural fire will be categorized as “natural”.

ACRONYMS

CRP	USDA Conservation Reserve Program
EPA	U.S. Environmental Protection Agency
FEJF	WRAP Fire Emissions Joint Forum
FRCC	Fire Regime Condition Class
GCVTC	Grand Canyon Visibility Transport Commission
NAAQS	National Ambient Air Quality Standards
NBTT	WRAP FEJF Natural Background Task Team
RHR	Regional Haze Rule
SMP	Smoke Management Program
TAR	Tribal Authority Rule
USDA	United States Department of Agriculture
WFIP	Wildland Fire Implementation Plan
WFSA	Wildfire Situation Analysis
WFU	Wildland Fire Use (fire managed for resource benefits)
WRAP	Western Regional Air Partnership

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1. INTRODUCTION

1.1 BACKGROUND

The WRAP, as the successor to the Grand Canyon Visibility Transport Commission (GCVTC), is charged with providing technical and policy support to western states and tribes to implement the GCVTC Recommendations and the RHR. The WRAP Fire Emissions Joint Forum (FEJF) was established to develop policy and technical tools to address smoke effects caused by wildland and agricultural fire.

In 1999, FEJF formed the Natural Background Task Team (NBTT) to develop a methodology to categorize fire emissions as either "natural" or "anthropogenic" in order to provide a basis for fire's inclusion in "natural" background condition values and for tracking reasonable progress goals toward the 2064 "natural" conditions goal.

On November 15, 2001, the WRAP approved by consensus the Policy document. The Policy is comprised of two main sections: Classification Criteria and Classification Program Management. The Classification Criteria section determines the "natural" and "anthropogenic" sources of fire emissions that contribute to regional haze, as stated in the Preamble to the RHR. The Classification Program Management section expresses the prerequisites that enable classification to be effective and equitable.

For purposes of this Guidance, terms such as "Agricultural Land," "Burn Unit," "Escaped Prescribed Fire," "Prescribed Fire," "Smoke Management Program," "Rangeland," "Wildfire," 'Wildland Fire Use" (WFU)," and "Wildland" are defined in Appendix A.

1.2 PURPOSE

The Policy allows fire emissions to be categorized as "natural" or "anthropogenic." The purpose of this Guidance is to identify consistent research, field procedures, maps, plans, etc. (categorization methods) to be used by burners and regulators when categorizing fire emissions as either "natural" or "anthropogenic."

This Guidance provides a categorization process that, in part, uses the fire regime condition classes that consider both live and dead fuel loadings. See Section 3 Categorization Process. Other available categorization methods include, but are not limited to, scientific research, agency and/or professional society publications, or management plans.

The fire regime condition class (FRCC) is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments. A fire regime condition class of I is indicative of conditions approaching natural, condition class II is indicative of conditions that depart moderately from natural, and condition class III is indicative of conditions that depart significantly

from natural. For additional information, please refer to the FRCC website (http://www.frcc.gov/).

This Guidance acknowledges that fire emissions categorization is variable. For example, prescribed fire may be categorized as "anthropogenic" since the effect is ecosystem restoration. However, there are instances when emissions from prescribed fire and WFUs may be categorized as "natural," since the effect may be ecosystem maintenance.

Identifying categorization methods through consensus prior to categorization provides burners and regulators with information for categorizing fire emissions that is uniform and defensible. This Guidance may, in part, streamline the implementation of state and tribal visibility protection plans by avoiding time spent on potential disputes over fire emissions categorization.

1.3 SCOPE AND APPLICABILITY

This Guidance applies to both wildland and agricultural lands regardless of ownership (i.e., federal, state, tribal, public, or private), or ignition (e.g., lightning, arson, accidental human, land management ecosystem health). This Guidance should be applied equitably across all land types and emission sources. However, it does not apply to fire on residential, commercial, or industrial property (e.g., backyard burning, garbage incineration, residential wood combustion, or construction debris).

The Policy addresses emissions from agricultural fire, Native American[1] cultural fire, escaped prescribed fire, wildfire, WFUs, and prescribed fire. The term "prescribed fire" includes agricultural fire, as well as both wildland and rangeland fire as defined by "Wildland" and "Wildland Fire" in the Policy. From this point forward, the phrase "prescribed fire" should be assumed to include Agricultural, Wildland and Rangeland if not otherwise stated.

The Policy determined that emissions from agricultural fire will be categorized as "anthropogenic" while emissions from wildfire and Native American cultural fire will be categorized as "natural." However, the Policy also determined that an escaped prescribed fire on wildland, rangeland, or agricultural land (e.g. fire intensity greater than specified within a pre-defined burn plan, within a pre-defined geographic area, or the fire exceeds the boundary of the pre-defined geographic area) will be treated as a wildfire under suppression. The Guidance deviates from Policy by allowing states and tribe to categorize emissions from escaped prescribed fire as either "natural" or "anthropogenic."

[1] Native American fire bibliographies are found at:
http://www.wildlandfire.com/docs/biblio_indianfire.htm
http://www.fs.fed.us/fire/fmt/index.html

Wildland and rangeland prescribed fire and WFUs may be categorized as either "natural" or "anthropogenic" based upon the primary and predominant purpose for the burn.

The Policy states that fire emissions should be managed to minimize their impacts on visibility in Federal Class I areas, in addition to public health and nuisance concerns. The effects of fire and air quality decisions on cultural resources, non-mandatory Class I areas, property and other resources must also be addressed. It is recognized that burners and regulators need to agree upon methods used to categorize fire emissions prior to the implementation of state or tribal visibility protection plans. Burners are required to categorize fire emissions, with regulatory oversight. However, many burners face the problem of managing land that is encompassed by, or is adjacent to, jurisdictions with dissimilar regulations (e.g., adjacent states or tribal lands within states).

If states and tribes employ different regulatory requirements, the burner may be in compliance with one jurisdiction while violating another. This fact may complicate the process of categorizing fire emissions and determining progress toward the 2064 "natural" conditions goal. It may further subject the burner to inconsistent enforcement actions that may be taken by states and tribes. Therefore, it is necessary to develop a procedure for burners to categorize fire emissions that is uniform and defensible.

The RHR outlines requirements for states and optional requirements for tribes to address regional haze in mandatory Federal Class I areas. The Policy acknowledges that the person(s) or entity that initiates a fire or manages the land where fire occurs is responsible for categorizing emissions with regulatory oversight. This Guidance considers regulatory oversight to be predominantly in the form of collaboration and assistance when necessary and/or when requested by the burner or interested party. However, there may be instances when the regulatory agency categorizes emissions for the person(s) or entity that initiates the fire (e.g. private landowners or lessees).

A state or tribe may elect to adopt elements of this Guidance and Policy as State Implementation Plan or Tribal Implementation Plan regulations. These elements may be an integral component of the permanent and enforceable measures developed to mitigate visibility impairment. Regulators may develop a process of reviewing categorizations which may be considered as a compliance / enforcement activity of the visibility protection plan.

Categorizing fire emissions supports states and tribes in tracking fire activity efforts using a fire tracking system that provides information essential to creating a fire emissions inventory. The fire emissions inventory is critical for establishing and documenting emissions used in regional modeling to demonstrate reasonable progress toward the 2064 "natural" conditions goal.

2. STATEMENTS FROM THE POLICY

The Policy set forth directives on how fire emissions may be categorized as either "natural" or "anthropogenic." The following statements from the Policy are relevant to this Guidance and are included herein for purposes of continuity between documents.

2.1 MANAGEMENT TO MINIMIZE VISIBILITY IMPACTS

Page 8 – *"All emissions from fires classified as an 'anthropogenic' source will be controlled to the maximum extent feasible subject to economic, safety, technical and environmental considerations."*

Page 10 – "*This Policy statement addresses the pressing need that all fires, regardless of subsequent classification as 'natural' or 'anthropogenic,' must be managed to minimize their impacts on visibility in Federal Class I areas, in addition to public health and nuisance concerns."*

2.2 FIRE CATEGORIZATION RESPONSIBILITY

Page 12 - *"For the categorization of fire emissions to function appropriately, the person(s) or entity that initiates a fire or manages the land where fire occurs is responsible for determining the classification using this Policy, with oversight by the applicable air quality regulatory authority."*

Note: There may be instances when the regulatory agency categorizes emissions for the person(s) or entity that initiates the fire (e.g. private landowners or lessees).

2.3 TRACKING FIRE EMISSIONS

Page 12 – "*Emissions from all fire will be tracked for the purposes of demonstrating reasonable progress."*

2.4 WILDLAND AND RANGELAND PRESCRIBED FIRE

Page 13 – "*Prescribed Fire is an 'anthropogenic' source, except where it is utilized to maintain an ecosystem that is currently in an ecologically functional and fire resilient condition, in which case it is classified as a 'natural' source."*

Page 13 – "*The primary distinction in classifying prescribed fire is between 'ecosystem restoration' and 'maintenance.' Only prescribed fire used to "maintain" an ecosystem is classified as 'natural.' All other prescribed fire, including restoration of ecosystems, is classified as 'anthropogenic'."*

Page 14 – "*A 'natural' classification may only be assigned to a prescribed fire when the person(s) or entity that initiates the prescribed fire determines that the fire is in an area identified as being in an ecologically functional and fire resilient condition. Further, the 'natural' classification will only hold if maintenance of the area's ecosystem is the primary and predominant purpose of the burn."*

Page 15 – *"Prescribed fires that are initiated for special interests such as wildlife, recreation, range, water, or other resources also fits into this other prescribed fire category."*

Note: This statement is included to reference the inclusion of 'rangeland' within the term 'prescribed fire.' The phrase 'other prescribed fire category' refers to uses of prescribed fire other than for ecosystem restoration, such as vegetative residue disposal or agricultural burning.

Page 18 – "*All other Native American vegetative burning (not otherwise for traditional, religious, or ceremonial purposes) is prescribed fire and will be classified accordingly."*

Page 23 – *Definition of 'Wildland' includes "…Silvicultural land and rangelands (per the FEJF charge), woodlots, and private timberlands will be included with wildlands for the purposes of the FEJF work."*

Page 23 – *Definition of 'Wildland Fire' includes "All types of fire except fire on agricultural land."*

2.5 AGRICULTURAL PRESCRIBED FIRE

Page 13 - *"A prescribed fire is any fire ignited by a planned management action to meet specific objectives on agricultural land or wildland, regardless of land ownership."*

Page 13 – "*The primary distinction in classifying prescribed fire is between 'ecosystem restoration' and 'maintenance.' Only prescribed fire used to 'maintain' an ecosystem is classified as 'natural.' All other prescribed fire, including restoration of ecosystems, is classified as 'anthropogenic'."*

Note: Agricultural burning is not considered ecosystem burning. Therefore, it is considered part of "all other prescribed fire" that is categorized as "anthropogenic".

Page 14 – "*A 'natural' classification may only be assigned to a prescribed fire when the person(s) or entity that initiates the prescribed fire determines that the fire is in an area identified as being in an ecologically functional and fire resilient condition. Further, the 'natural' classification will only hold if maintenance of the area's ecosystem is the primary and predominant purpose of the burn."*

Page 15 – *"Prescribed fire may be utilized for purposes other than ecosystem restoration and maintenance. It may be conducted for the purposes of vegetative residue disposal (e.g. timber slash or wheat stubble burning). Prescribed fire may be used to increase or maintain agricultural and silvicultural output or forage values. Fires may also be utilized to control weeds, pests, and diseases, and improve yield (e.g., grass and rice field burning)."*

Page 18 – *"All other Native American vegetative burning (not otherwise for traditional, religious, or ceremonial purposes) is prescribed fire and will be classified accordingly."*

2.6 ESCAPED PRESCRIBED FIRE

Page 17 – "*An escaped prescribed fire is any fire ignited by management actions on wildand or agricultural land to meet specific objectives, that goes out of prescription (e.g. fire intensity greater than specified in a pre-set fire plan, pre-set wind speeds exceeded, fire jumps pre-established boundaries, etc.) in a pre-defined geographic area."*

Page 17 – "*The few prescribed fires that do escape become wildfires, and require appropriate suppression action by the land manager. The underlying principle guiding the classification of these fires is the recognition that the ability to control the emissions from escaped prescribed fires is limited, which is the same as that of wildfires under suppression. Therefore, an escaped prescribed fire will be treated as a wildfire under suppression."*

2.7 WILDFIRE

Page 15 – "*A wildfire is any unwanted, non-structural fire that can occur on wildlands, where there may be few scattered structures, or agricultural lands. Unwanted wildfires can be ignited by both natural causes such as lightning or human causes such as accidental human ignitions, escaped prescribed fires, or arson."*

Page 15 – "*Wildfire that is suppressed by management action is a 'natural' source. Wildfire, when suppression is limited for safety, economic, or suppression resource limitations, remains a 'natural' source. Wildfires managed for resource objectives are classified the same as prescribed fires."*

Page 16 – "*The ability to control the emissions from wildfires under suppression is limited, which was the underlying principle for the inclusion of this source in the 'natural' classification. Further, the fact that in most instances, everything possible is being done to suppress the fire safely and economically also supported a 'natural' source classification."*

2.8 WILDLAND FIRE USE

Page 17 – "*The underlying principle guiding the classification of these fires is the potential for emissions management and/or control, which is the same as that of prescribed fires. The classification in these instances, just like prescribed fire, is based on the ecological condition of the land. Therefore, a wildfire managed for resource objectives will be treated as a prescribed fire and classified according to the same criteria."*

2.9 NATIVE AMERICAN CULTURAL FIRE

Page 18 – "*Native American cultural burning for traditional, religious, and ceremonial purposes is a 'natural' source."*

Page 18 –"*This policy does not apply to Native American cultural non-vegetative burning for traditional, religious, or ceremonial purposes (e.g., cremation, sweat lodge fires).*"

Page 18 – "*A 'natural' classification may be assigned to a Native American cultural burn when the person(s) or entity that initiates the vegetative burn determines, with oversight by the designated tribal air quality regulatory authority or EPA, that the fire has been established by the tribal government for a traditional, religious, or ceremonial purpose."*

Note: For the purposes of determining the categorization of Native American Cultural Burning, the "designated tribal air quality regulatory authority" is that entity so designated by the Tribe.

Note: Some Tribes may not consider it appropriate to include any references to cultural burning in the development and implementation of visibility protection implementation plans.

3. CATEGORIZATION PROCESS

The RHR requires states, in coordination with federal land managers and other interested parties, to develop and implement visibility protection plans to reduce anthropogenic (man-made) air pollution that causes visibility impairment. Tribes are not subject to the same requirements of the RHR as states, but tribes wishing to assume the regional haze requirements outlined in the RHR may, according to the TAR, seek approval under 40 CFR 49 to be "treated in the same manner as states."

3.1 FIVE-STEP CATEGORIZATION PROCESS

Burners are required to categorize emissions from burning as either “natural” or “anthropogenic” using various techniques and/or applications relating to the current condition of the wildland fuels. For each burn unit, burners must determine whether the live and dead fuel loadings would result in a burn that would be considered ecosystem maintenance and categorized as “natural” or ecosystem restoration and categorized as “anthropogenic.” Following burn categorization, burners and regulators will work together to control smoke emissions from “anthropogenic” burning. There may be situations when burners need to verify categorizations for the purposes of regulation or public involvement. Therefore, documentation of categorization methods is critical.

The five-step categorization process is outlined below:

STEP 1: Burner to determine the type of burn and to establish the geographic location(s) of proposed burn(s).
STEP 2: Burner to determine the predominant live and dead fuel loading(s) for each burn(s).
STEP 3: Burner to consult fire regime condition class publications or other publications that include, but are not limited to, scientific research, agency and/or professional society publications, or management plans in order to determine whether burn(s) would be considered ecosystem maintenance or ecosystem restoration.
STEP 4: Burner to categorize burn(s) as either “natural” or “anthropogenic.”
STEP 5: Burner to communicate results with regulators.

Figure 1 summarizes the five-step categorization process for each type of fire. Reference to federal publications such as the FRCC, Wildland Fire Implementation Plan (WFIP), and Wildfire Situation Analysis (WFSA) are elaborated in Appendix A Glossary. Table 1 outlines state-of-the-knowledge information relevant for determining the ecological, functional, and fire resilient condition of an ecosystem affected by various types of fire.

3.2 MULTIPLE DAY BURNS

The 2003 WRAP Policy for Fire Tracking Systems (Tracking Policy) outlines seven essential components necessary to calculate fire emissions and to uniformly assess impacts to regional haze. “Date of Burn” is one essential component. Section 3.3.1 of the Tracking Policy states the temporal resolution of fire activity be attributed to a specific prescribed burn unit on a specific day in order to correlate fire emissions with the 20 percent “best” and 20 percent “worst” day visibility monitoring data. Burns encompassing multiple days requires tracking emissions on a daily basis.

Policy statements supporting the categorization process recognize the spatial and temporal variability of fire emissions and the significance in determining natural

background condition values and for tracking reasonable progress goals toward the 2064 natural conditions goal. Spatial considerations include fire emissions from landscape to burn unit scale. Temporal considerations include fire emissions generated on a daily (24-hour calendar day) basis generated from burner accomplishment reports.

Appendix B outlines an example worksheet available to land mangers and regulators for determining fire emissions categorization on a daily basis. The worksheet is an optional tool for burners to determine the appropriate categorization of fire emissions for their own use.

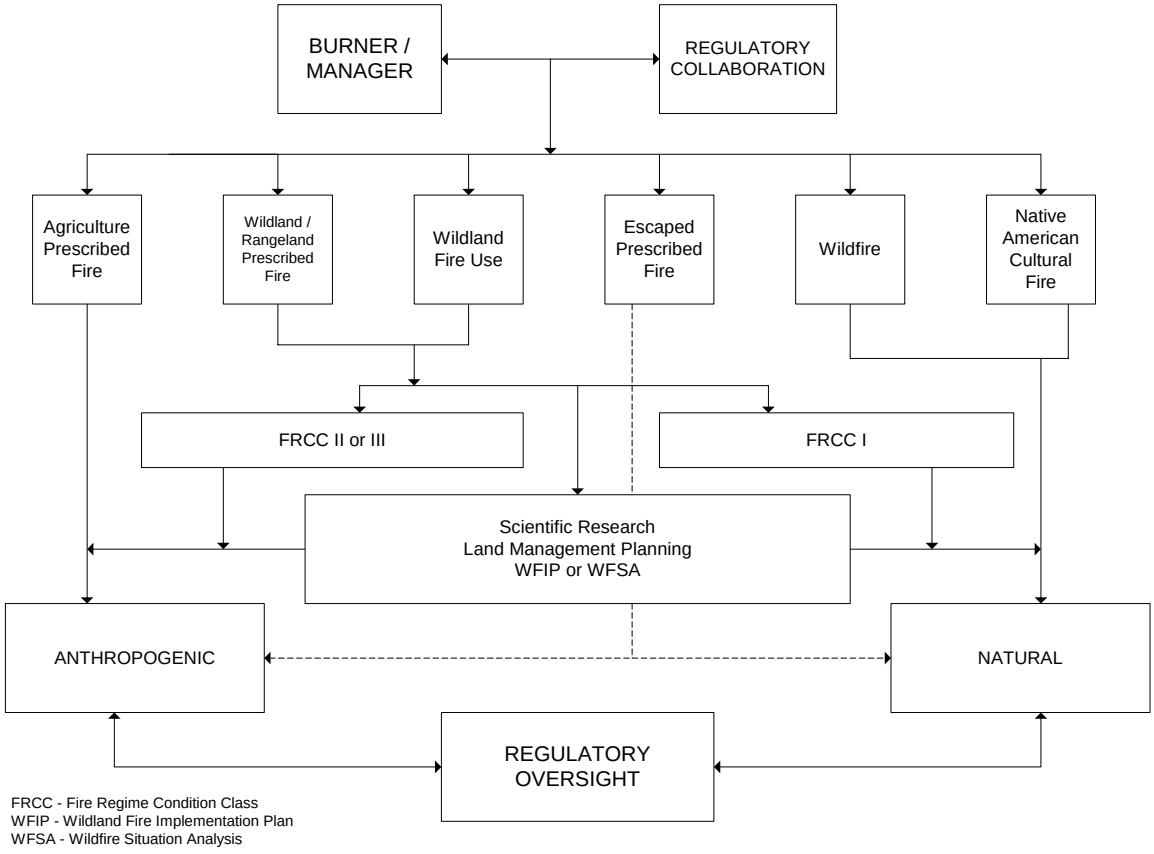

FIGURE 1

CATEGORIZATION PROCESS

TABLE 1

CATEGORIZATION METHODS FOR ANTHROPOGENIC AND NATURAL EMISSIONS

FIRE TYPE	"ANTHROPOGENIC" METHODS	"NATURAL" METHODS
Wildland / Rangeland Prescribed Fire	• Fire regime condition - Class II or III. http://www.frcc.gov/ • Fire Management Plan and other land management planning documents • Scientific research, including, but not limited to: University publications; research facility bulletins or papers; professional society publications; or credible contracted services.	• Fire regime condition - Class I. http://www.frcc.gov/ • Fire Management Plan and other land management planning documents. • Scientific research, including, but not limited to: University publications; research facility bulletins or papers; professional society publications; or credible contracted services.
Agricultural Prescribed Fire	• All activities meeting the definition of PL 104-127, Section 1240A. • Fire Management Plan and other land management planning documents.	• Not applicable.
Escaped Prescribed Fire	• Wildland Fire Situation Analysis (WFSA). • Fire Management Plan. • State / Tribe regulator preference.	• Wildland Fire Situation Analysis (WFSA). • Fire Management Plan. • State / Tribe regulator preference.
Wildfire	• Not applicable.	• Wildfire Implementation Plan (WFIP). • Wildland Fire Situation Analysis (WFSA). • Fire Management Plan.
Wildland Fire Use	• Wildlfire Implementation Plan (WFIP). • Wildland Fire Situation Analysis (WFSA).	• Wildfire Implementation Plan (WFIP). • Wildland Fire Situation Analysis (WFSA).
Native American Cultural Fire	• Not applicable.	• Tribe may identify through tribal government resolution, rule, or ordinance. Some Tribes may not consider it appropriate to include any references to cultural burning in the development and implementation of visibility protection plans.

The following statements provide burners and regulators with specific guidance for categorizing fire emissions:

3.3 NO PARTIAL CATEGORIZATION OF FIRE EMISSIONS

<u>Statement:</u> Fire emissions from a specific burn unit on a specific day are wholly categorized as either "natural" or "anthropogenic." No partial categorizations of burn units are recognized.

The intent of the Policy is that fire emissions be categorized based upon the primary and predominant purpose for the burn. The Tracking Policy confines fire emissions tracking to a daily basis. Therefore, this Guidance does not recognize partial categorization of fire emissions from a specific burn unit on a specific day. For example, a specific burn unit ignited on a specific day cannot be categorized as having 30 percent "natural" and 70 percent "anthropogenic" fire emissions.

3.4 REVISIONS TO BURN CATEGORIZATION

<u>Statement:</u> Categorizations may be revised, prior to ignition, with regulatory oversight. Categorizations cannot be revised following ignition.

States and tribes will most likely regulate fire emissions through a form of smoke management program (SMP). It is through the SMP that burners / managers may identify categorizations and track fire emissions for purposes of demonstrating reasonable progress toward the 2064 natural conditions goal.

This Guidance recognizes that burners may need the flexibility to revise categorizations submitted to the SMP in order to maintain accuracy in fire emissions reporting. Through the SMP, regulators will be able to track final categorizations prior to ignition.

3.5 EMISSIONS FROM ESCAPED PRESCRIBED FIRE

<u>Statement:</u> Emissions resulting from an escaped prescribed fire located outside the original burn unit will be categorized according to state or tribal regulator preference.

Escaped prescribed fire requires appropriate suppression action by the land manager. The ability to control emissions from escaped prescribed fire is limited, just like wildfires under suppression. However, there exists conflicting interpretations of the Policy to categorize escaped prescribed fire as either "natural" or "anthropogenic." Therefore, emissions from acres blackened outside the original burn unit caused by an escaped prescribed fire will be categorized as either "natural" or "anthropogenic" according to state or tribal interpretation of the Policy. States and tribes are encouraged to work

toward developing consistent application of escaped prescribed fire categorizations. This may be part of state or tribal smoke management plans and/or through the WRAP FEJF's Regional Coordination of Smoke Management Programs guidance process.

This Guidance clarifies that fire emissions from approved burn units must be wholly categorized as either "natural" or "anthropogenic" prior to ignition and that categorization may not be revised following ignition as outlined in Sections 3.3 and 3.4 above. Therefore, acres blackened inside the original burn unit retain the categorization assigned prior to ignition. Upon escape, fire emissions from acres blackened outside the original burn unit caused by an escaped prescribed fire will be categorized as either "natural" or "anthropogenic" according to state or tribal interpretation of the Policy and in conformance with appropriate EPA regulations and policies.

Burners and regulators are encouraged to work cooperatively before, during, and after an escaped prescribed fire incident. The recommended coordination process is that following an escaped prescribed fire incident, the burner takes appropriate fire management action and, as soon as practicable, the burner notifies the regulator of the incident. The burner and regulator share information during and after the escaped prescribed fire incident regarding categorization.

This Guidance recognizes that technical challenges may arise out of distinguishing impacts due to prescribed fire and escaped prescribed fire. Agencies may need to develop technically defensible analyses to distinguish impacts due to prescribed fire and escaped prescribed fire.

Fire emissions will be tracked on a daily basis for both the original burn unit and for the escaped prescribed fire portion. Daily fire emissions for the original burn unit and/or the escaped prescribed fire portion may be calculated by multiplying the number of blackened acres by an emission factor to determine total fire emissions. Appendix B is an optional worksheet to assist burners in categorizing daily emissions that includes escaped prescribed fire situations.

3.6 VERIFICATION OF CATEGORIZATION METHODS

<u>Statement:</u> Upon request, the person(s) or entity that initiates a fire or manages the land where fire occurs should make available information substantiating any fire emissions categorization.

As outlined in Section 2 above, the burner is responsible for categorizing fire emissions with collaboration from regulators as necessary. For practical reasons, the exchange of information between burners and regulators relevant to verifying fire emission categorization may be necessary.

Burners / managers should recognize that state and tribal regulators may have existing regulations that define fire emissions as either "natural" or "anthropogenic" for purposes

of regulating open burning activities within their jurisdiction. This Guidance recommends that burners / managers consult with state and/or tribal air quality regulators prior to ignition to verify regulations governing classifications.

3.7 UNIVERSE OF ACCEPTABLE CATEGORIZATION METHODS

Statement: Categorization methods are not limited to those identified solely within this Guidance. Table 1 is considered dynamic and includes future sources of scientific research, field techniques, maps, etc.

Table 1 above outlines state-of-the-knowledge information relevant for determining the ecological, functional, and fire resilient condition of an ecosystem affected by various types of fire. It is recognized that other sources of information will become available for categorization. Therefore, Table 1 should be viewed as providing current examples of information burners and regulators may use for categorization. Future scientifically credible information will also be eligible for categorizing fire emissions.

APPENDICES

APPENDIX A GLOSSARY[1]

Agricultural Land[2] - Agricultural land includes croplands, pasture, and other lands on which crops or livestock are produced (PL 104-127, Section 1240A). Rangeland will be included with wildland for the purposes of the Fire Emissions Joint Forum work.

Anthropogenic Emissions Source Classification ("anthropogenic")[2] - A categorization that designates which fire emissions contribute to visibility impairment in a Federal Class I area. "Anthropogenic" emissions must be controlled to achieve progress toward the 2064 natural conditions goal for each Federal Class I area in the WRAP region. This classification includes natural and human-caused ignitions.

Burn Unit – A specific activity area occupied by any type of fire, regardless of ownership, cause of ignition, or purpose. Emissions from burn units will be tracked on a daily (24-hour) basis.

Categorization Methods - Scientific research, professional society publications, agency policies and procedures, maps, etc. that serve to categorize fire emissions as either "natural" or "anthropogenic".

Escaped Prescribed Fire[2] - Any fire ignited by management actions on wildland or agricultural land to meet specific objectives that goes out of prescription (e.g. fire intensity greater than specified in a pre-set fire plan, pre-set wind speeds exceeded, fire jumps pre-established boundaries, etc.) in a predefined geographic area.

Federal Class I Area[2] – In 1977, Congress identified 156 national parks, wilderness areas, international parks and other area that were to receive the most stringent protection from increases in air pollution. It also set a visibility goal for these areas to protect them from future human-caused haze, and to eliminate existing human-caused haze, and required reasonable progress toward that goal.

Fire Regime Condition Class (FRCC) - An interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels and disturbance regimes. Assessing FRCC can help guide management objectives and set priorities for treatments.

Guidance - 2005 WRAP Guidance for Categorizing Natural vs Anthropogenic Fire Emissions.

Interim Policy – EPA Interim Air Quality Policy on Wildland and Prescribed Fires. May 1998 publication – 39 pages.

NAAQS[2] – National Ambient Air Quality Standards.

Natural Emissions Source Classification ("natural")[2] - A categorization that designates which fire emissions can result in a natural reduction of visibility for each Federal Class I area in the WRAP region. This classification includes natural and human-caused ignitions.

Natural Events Policy – Memorandum, with Appendix, dated May 30, 1996, signed by Mary D. Nichols, Assistant EPA Administrator for Air and Radiation Program.

Non-Mandatory Class I Areas – Under the Clean Air Act's Prevention of Significant Deterioration program, States and Tribes may, with EPA approval, redesignate their lands as "Class I" areas to enhance protection of their air quality resources.

Policy - 2001 WRAP Policy for Categorizing Fire Emissions.

Prescribed Fire[2]- Any fire ignited by management actions to meet specific objectives (i.e., managed to achieve resource benefits).

Rangeland[2] - Land on which the historic climax plant community is predominantly grass-like plants, forbs, or shrubs. Includes lands re-vegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of ecological principles. Rangeland includes natural grasslands, savanna, shrublands, most deserts, tundra, alpine communities, coastal marshes and wet meadows (Natural Resources Conservation Service National Range and Pasture Handbook, 1997.)

Smoke Management Program (SMP)[2] – The objectives of a basic or enhanced smoke management program are to ensure: (1) no health-based NAAQS are exceeded; (2) nuisance smoke is mitigated; and (3) smoke impacts on visibility are minimized in Class I areas and meet the Grand Canyon Visibility Transport Commission Recommendations.

Tracking Policy - WRAP 2003 Policy for Fire Tracking Systems.

Wildfire[2] - Any unwanted, non-structural fire.

Wildland Fire Use (WFU)[2] - The management of naturally ignited fires, regardless of land type or ownership, to accomplish specific, pre-stated resource management objectives in predefined geographic areas with or without a plan in place. This term is considered to be analogous with the terms Wildland Fire Managed for Resource Benefits and Prescribed Natural Fire that are used in regulations and policies regarding Federal wildlands.

Wildland[2] - An area where development is generally limited to roads, railroads, power lines, and widely scattered structures. The land is not cultivated (i.e., the soil is distributed less frequently than once in 10 years), is not fallow, and is not the USDA Conservation Reserve Program (CRP). The land may be neglected altogether or managed for such purposes as wood or forage production, wildlife, recreation, wetlands,

or protective plant cover (EPA Interim Air Quality Policy on Wildlands and Prescribed Fires). The land is not "agricultural land" as operationally defined above. Silvicultural land and rangelands (per the FEJF charge), woodlots, and private timberlands will be included with wildlands for the purpose of the FEJF work.

Wildfire Situation Analysis (WFSA) - The WFSA is a decision analysis process. A WFSA is required when the documentation of fire suppression decisions needs to occur because one the following conditions have taken place: 1) wildland fire escapes initial actions or is expected to exceed initial action, 2) a wildland fire being managed for resource benefits exceeds prescription parameters in the fire management plan, and 3) a prescribed fire exceeds its prescription and is declared a wildland fire.

Wildland Fire Implementation Plan (WFIP) - Specific planning and documentation requirements exist for management of wildland fires where resource benefits are a primary objective. The complete WFIP consists of three stages and is prepared progressively. Each individual stage constitutes a stand alone implementation plan and specific forms and formats are available for each stage. Progression from one stage to the next is dependent upon fire activity, potential duration, and relative risk as it relates to the incident. As each progressive stage is prepared, it is attached to the previous stage and becomes the guiding document until management of the fire accomplishes resource objectives or progression to a higher stage occurs.

[1] This glossary is intended to provide readers with several operating definitions to facilitate a consistent review of this Guidance. However, this glossary is not intended to be a complete list of all terms and acronyms.
[2] From Appendix A of the 2001 WRAP Policy for Categorizing Fire Emissions.

APPENDIX B DAILY FIRE EMISSIONS CATEGORIZATION WORKSHEET[1]

1. TODAY'S DATE: _____

2. ACTIVITY NAME: _____

3. ACTIVITY TYPE: (CHECK ALL APPROPRIATE RESPONSES BELOW)

_____ Agricultural Prescribed Fire (Check "Anthropogenic" for Section 4)
_____ Native American Cultural Fire (Check "Natural" for Section 4) [2]
_____ Wildland or Rangeland Prescribed Fire
_____ Wildland Fire Use
_____ Wildfire (Check "Natural" for Section 4)
_____ Escaped Prescribed Fire (Complete Sections 4 & 5 below)

4. ORIGINAL BURN UNIT (OR WILDFIRE) ACRES BLACKENED TODAY*: (REQUIRED) _____

***CATEGORIZATION: (CHECK APPROPRIATE RESPONSE BELOW)**

_____ "natural" (maintenance burning or wildfire)
_____ "anthropogenic" (restorative burning)

5. ESCAPED PRESCRIBED FIRE ACRES BLACKENED TODAY*: (IF APPROPRIATE) _____

*Categorization will be either "natural" or "anthropogenic" according to state or tribal interpretation of the Policy.

6. CATEGORIZATION METHOD USED: (CHECK APPROPRIATE RESPONSE BELOW)

_____ Fire Regime Condition Class
_____ Scientific Research
_____ Land Management Planning
_____ WFIP or WFSA
_____ Other _____

[1] This optional worksheet may be used on a daily basis to track fire emissions categorizations for specific events on specific days. A new daily worksheet is necessary to track escaped prescribed fire emissions.
[2] Some Tribes may not consider it appropriate to include any references to cultural fire.